

Republic Of Korea Reduction of Financing Barriers for Energy Savings Performance Contracts

D.L. Howard

Technical Report
NREL/TP-710-38630
November 2005

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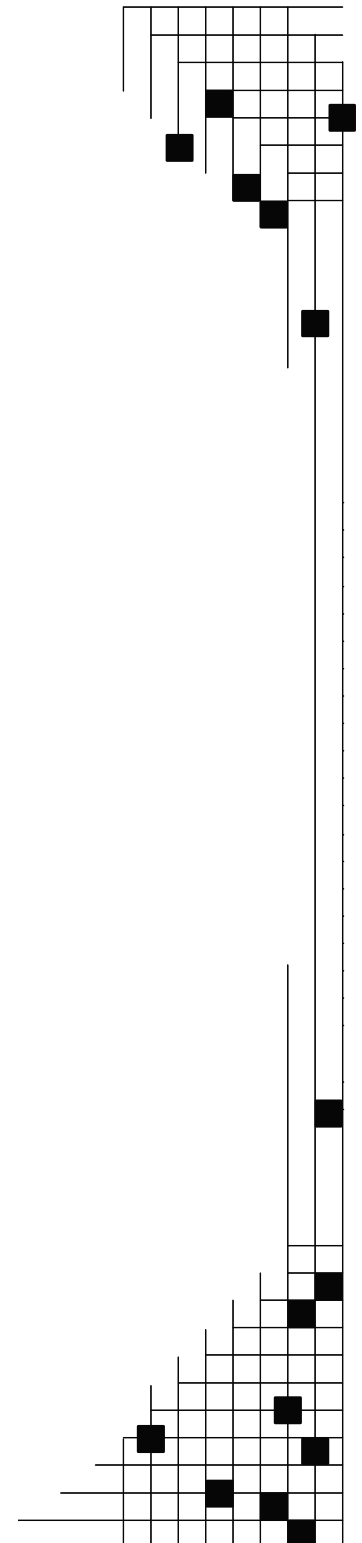
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List of Acronyms

DOE	Department of Energy
EPA	Environmental Protection Agency
EPACT	Energy Policy Act of 1992
ESCO	Energy Service Company
ESPC	energy saving performance contract
EXIM	Export/Import
GAP	general accounting principle
GEF	Global Environmental Facility
GHG	greenhouse gas
IFC	International Finance Corporation
KEMCO	Korea Energy Management Corporation
LLC	Limited Liability Corporation
MOCIE	Ministry of Commerce, Industry and Energy
NREL	National Renewable Energy Laboratory
TCAPP	Technology Cooperation Agreement Pilot Project
UNFCCC	United Nations Framework Convention on Climate Change
USAID	U.S. Agency for International Development

Executive Summary

The U.S. Government initiated the Technology Cooperation Agreement Pilot Project (TCAPP) in 1997 to demonstrate and establish the benefits of following an integrated approach to the transfer of climate-friendly technologies in support of Article 4.5 of the United Nations Framework Convention on Climate Change (UNFCCC). In Korea, the general approach of TCAPP was to (1) identify priority energy technologies that support Korean sustainable development priorities and simultaneously reduce greenhouse gases, and to (2) identify the barriers to the application and dissemination of those technologies and design actions to overcome these barriers. Through TCAPP, heat pumps, energy management, and methane recovery were identified as priority technologies for Korea. Technology cooperation is achieved in this program through private sector collaboration between Korean and international firms conducting business in the selected technology areas. This collaboration identifies projects in Korea that can be undertaken jointly in a mutually beneficial way.

In 2002, The U.S. Environmental Protection Agency (EPA) and its partner agencies agreed to wrap up the TCAPP as a pilot program. They then instituted the Climate Technology Partnerships (CTP) program to build on progress made under TCAPP to implement technology cooperation in several developing countries including Korea.

One of the technology areas in CTP Korea is energy management, with a focus on the development of an Energy Service Company (ESCO) industry to reduce emission of greenhouse gases (GHGs) especially in the industrial sector. An ESCO is a business that develops and implements projects to improve the energy efficiency of facilities. By definition, this involves large initial investments that are paid back over a number of years from the energy savings generated.

Numerous barriers inhibit the development of a successful ESCO industry. These include capital constraints. The ESCO business requires large initial investments, and few financial institutions are familiar with the energy saving performance contracts used by ESCOs to finance their projects. As a result, it is often difficult for ESCOs to find financing for their projects, and the financing they find is often expensive. Other barriers to ESCO market development faced in Korea include artificially low energy prices, inconsistent ESCO quality, a shortage of skilled energy auditors, and the short payback times required of industrial projects by financiers. Perhaps the most important barrier is that many ESCOs in Korea lack the equity needed to continue to finance further projects.

The Koreans have instituted a number of initiatives to overcome barriers to development of the ESCO industry. These include training energy auditors, providing free energy audits to industry, and developing a fund for low interest loans. CTP Korea has focused on matchmaking between Korean and international ESCOs, identifying international financiers who might be interested in investing in Korean ESCO projects, and increasing the equity in Korean ESCOs. These partnerships can help overcome Korean ESCOs' lack of equity, since the large international ESCOs that have access to financiers with capital to invest.

The ultimate objective of the CTP Korea ESCO project is to help foster the development of a viable, self-sustaining market for ESCOs in Korea. This can be accomplished through market transformation so that ESCOs identify profitable projects, attain adequate financing, and implement projects that benefit clients and simultaneously reduce greenhouse gas emissions.

1.0 Background

1.1 Climate Technology Partnerships

The U.S. Government initiated the Technology Cooperation Agreement Pilot Project (TCAPP) in 1997 to demonstrate and establish the benefits of following an integrated market transformation approach to the transfer of climate-friendly technologies in support of Article 4.5 of the United Nations Framework Convention on Climate Change (UNFCCC). TCAPP developed a market-based, developing country-driven strategy. This included a sector-based technology needs assessment, identification of activities designed to remove market barriers, and facilitation of private investment in priority technologies in partnership with various stakeholders, including the international business community. Korea, China, Brazil, Egypt, Kazakhstan, Mexico, and the Philippines participated in this program.

The TCAPP contributed in substantial ways to the ongoing development of UNFCCC technology transfer discussions and related international programs. After considerable consultation with partners: U.S. Agency for International Development (USAID), Environmental Protection Agency (EPA), and Department of Energy (DOE), the sponsoring U.S. agencies determined in 2001 that a new program approach was needed to shift to implementation of technology transfer strategies in key countries and sectors. The TCAPP pilot program was concluded and current efforts are focused on accelerating the implementation of selected environmentally sound technologies which were identified as national priorities during TCAPP and through a broader range of U.S. Government sponsored activities. The new program is known as Climate Technology Partnerships.

1.2 CTP Korea

Korea joined TCAPP in January 1999 in an effort to address some of the barriers it had identified to GHG-mitigating technologies and methods. The Ministry of Commerce, Industry and Energy (MOCIE) of the Republic of Korea designated the Korea Energy Management Corporation (KEMCO) to lead the implementation of technical TCAPP activities for Korea. The National Renewable Energy Laboratory (NREL) is leading implementation of the TCAPP work in Korea for the U.S., which is funded by EPA. The general approach of TCAPP in Korea was to (1) identify priority energy technologies, which support Korean sustainable development priorities and simultaneously reduce GHGs, and to (2) identify the barriers to the application and dissemination of those technologies, and design actions to overcome these barriers. Through a systematic analysis of alternatives and consultation with key stakeholders, heat pumps, energy management, and methane recovery were identified as priority technologies for Korea. Technology cooperation is achieved in this program through private sector collaboration between Korean and international firms.

In 2002, the TCAPP pilot program was completed and the program phased out. EPA and its federal partners then instituted CTP, a follow-on program designed to build on progress made under TCAPP to implement technology cooperation in several developing countries. In order to better focus resources under CTP in Korea, energy management and methane recovery were selected for further development, and heat pumps were dropped from the program.

1.3 How CTP Works in Korea

One major underlying concept of the TCAPP/CTP strategy for energy management and ESCO development is that partnerships between Korean and developed country private sector firms jointly implementing projects in Korea will best propel diffusion of clean technologies. CTP advances these partnerships through project development activities in the priority technology areas. Once these partnerships are formed and projects identified, the firms address typical project parameters like financing, return on investment, division of responsibilities, and introduction of technologies. Ultimately, the goal is transformation of the Korean market resulting in a self-sustaining and growing ESCO industry, which will deliver substantial amounts of clean technology that saves (or generates new) energy and reduces GHG emissions. Once successful, this institutional transformation will ensure that new efficient technologies will continue to be rapidly deployed in Korea.

In addition to direct project activities, it is important to establish a process of strategic activities to identify and address structural barriers to new technology diffusion. Structural barriers are varied, and may include artificially low energy prices, difficulty obtaining competitive financing, industry regulations that discourage innovation, etc. Structural barriers may be prohibitively onerous, or simply make it harder for projects to succeed. In order to clear a path for market transformation, these barriers must be addressed and remedied.

CTP envisions a set of strategic activities to address structural barriers in parallel with activities to promote and develop projects. By addressing both project-level and strategic issues, CTP encourages new partnerships and projects while also improving the environment for technology diffusion so that ultimately, market transformation will occur. Market transformation will be attained when the ESCO industry is self-sustaining, profitable and growing in part a result of, but no longer requiring, the enabling activities initiated through CTP.

Project development alone will help introduce and diffuse priority technologies, yet this is a piecemeal approach. The long-term vision of CTP is to demonstrate a successful model of country-driven technology cooperation programs, designed to achieve national technology and development goals through market transformation. Successful demonstration and replication of this general approach can greatly expand the reach of new technologies and accelerate their diffusion into developing country economies, which in turn will result in sustained significant reductions of GHG emissions and increases of other related benefits.

In Korea, to date, most of the effort has centered on project development activities – identifying potential performance based projects for ESCOs, developing partnerships, conducting feasibility studies of landfill sites, etc. This experience has yielded several new ESCO and landfill methane projects. It has also highlighted several important barriers that may be dampening greater market penetration of these technologies. To address this, CTP Korea has focused on addressing strategic barriers to technology diffusion. The process used includes barrier identification, barrier analysis, recommended remedies, and activities to foster policy changes to remove key barriers (see Figure 1).

2.0 What is an ESCO?

“An ESCO, or Energy Service Company, is a business that develops, installs, and finances projects designed to improve the energy efficiency and maintenance costs for facilities over a 7 to 10 year time period. ESCOs generally act as project developers for a wide range of tasks and assume the technical and performance risk associated with the project. Typically, they offer the following services:

- develop, design, and finance energy efficiency projects
- install and maintain the energy efficient equipment involved
- measure, monitor, and verify project energy savings
- assume the risk that the project will save the amount of energy guaranteed.

These services are bundled into the project cost and are repaid through the dollar savings generated.

ESCO projects are comprehensive, which means that the ESCO employs a wide array of cost-effective measures to achieve energy savings. These measures often include the following: high efficiency lighting, high efficiency heating and air conditioning, efficient motors and variable speed drives, and centralized energy management systems.

What sets ESCOs apart from other firms that offer energy efficiency, like consulting firms and equipment contractors, is the concept of performance-based contracting. When an ESCO undertakes a project, the company compensation, and often the project financing are directly linked to the amount of energy that is actually saved.

Typically, the comprehensive energy efficiency retrofits inherent in ESCO projects require a large initial capital investment and offer a relatively long payback period. The customer's debt payments are tied to the energy savings offered under the project so that the customer pays for the capital improvement with the money that comes out of the difference between pre-installation and post-installation energy use and other costs.

The impetus behind the formation of the ESCO industry is the failure of energy consumers to capture much of the potential for cost-effective energy efficiency measures. Facilities have generally failed to realize their full potential for cost effective energy efficiency measures when working with traditional engineering firms and equipment suppliers on a fee for service or product sales basis. Since the project risk was born entirely by the facility owner, who was unfamiliar with new energy efficient technology, investments tended to be limited. On the other hand, the ESCO is willing to assume the performance risk of a project. The ESCO is also more comfortable building a larger project using a mix of technologies to maximize the total savings and increase its sales while generating greater energy savings at the facility.

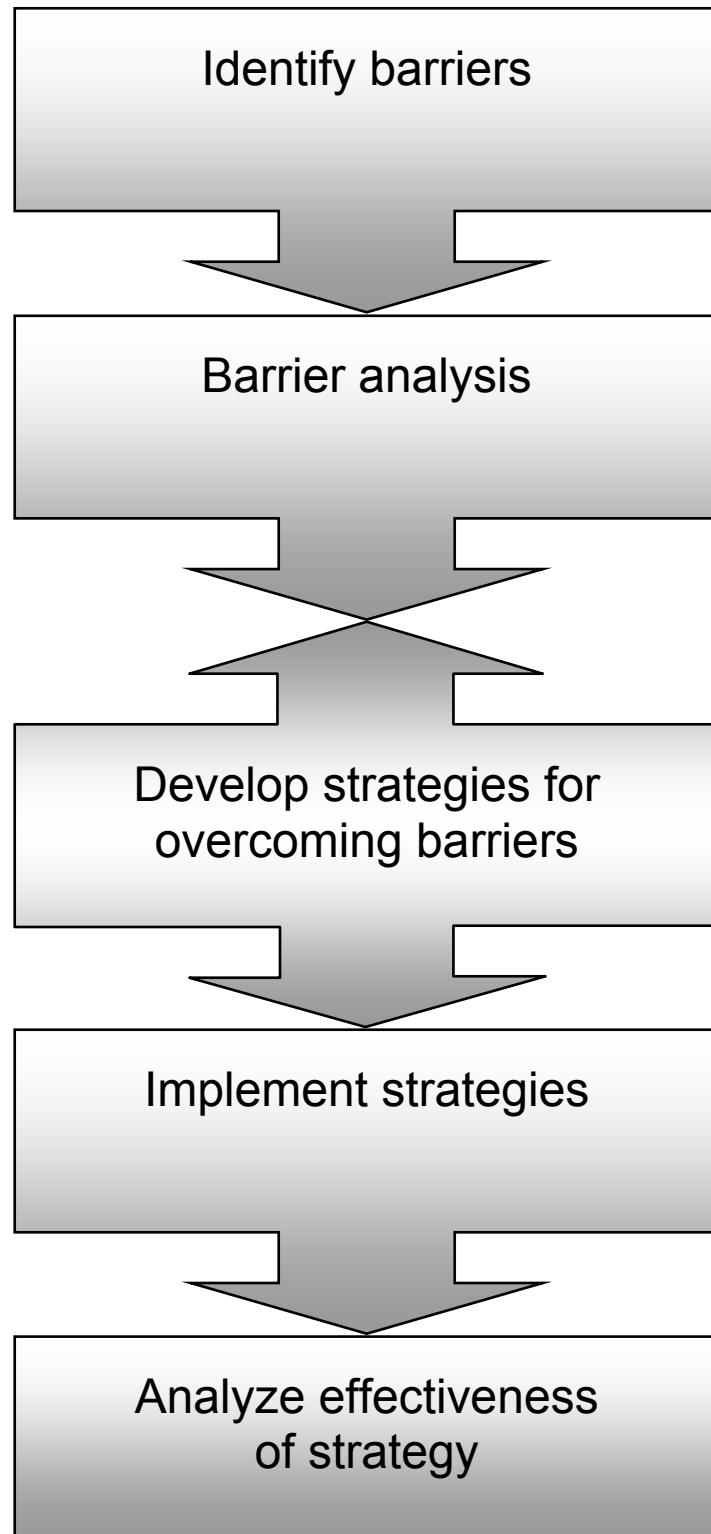


Figure 1. Process of Addressing Strategic Barriers Under CTP Korea

The market for energy saving measures may be inhibited by the distrust of facility managers in projected savings results. Most facility managers are wary of the claims made by equipment suppliers about the financial benefits of their equipment. An equipment supplier typically warrants the operation of the equipment, not the impact of the equipment, on its client's profit and loss statement. Actual savings at a facility are often a complicated calculation dependent on human interaction (specifically hours of use), cost of fuel, and baseline conditions. Moreover, facility managers are wary of engineering firms and their tendency to overstate costs and investment returns to defend a large project. By taking performance risk, the ESCO assures the facility manager that the expectations of the project will be realized. If its project fails to meet projections, the ESCO will be affected financially.

The ESCO and/or a third party financier, such as a bank, leasing institution, or other source, can finance the initial project costs of project development, design, and installation. This feature takes more of the financial risk off the shoulders of the facility owner. It also allows facility owners to make needed energy efficient infrastructure improvements, without having to fund the high up front costs required by many to make many of these improvements.

3.0 Barriers to Development of an ESCO Market

While there are a variety of barriers facing ESCOs worldwide, a major common barrier is securing sufficient financing at reasonable rates to maintain an ongoing business. Some of these barriers are discussed below.

3.1 Capital Constraints

Since the ESCO assumes the performance risk, having the ESCO carry the liability on its books makes sense and may be of significant value to the customer who enjoys the benefits of the efficiency improvements without recording the liability. The problem with this scheme is that the ESCO may quickly exhaust its ability to finance new projects.

The nature of the ESCO business requires relatively large sums of money for extended periods of time. Funding is needed for the development of the project including salaries, travel, research, temporary metering, etc. to establish the potential of the project and determine the baseline energy use. Funding is then needed for design and installation of the equipment, both for equipment and labor costs.

Project development funding may be carried by the ESCO. Large ESCOs occasionally fund the initial installation costs, but extensive projects usually are financed through a third party. The financed projects in some instances use two-part financing. A construction loan may be procured for installation, and then all costs are rolled into a long-term service phase loan. The construction loan typically is put into an escrow account so that the interest earned on the remaining balance can offset the interest on the loan to some extent. Periodic draws are made against this escrow account as needed during construction to pay for costs during that phase of the project.

While the investments are large and front-loaded in the process, the source of revenue is spread out over the life of the project and is derived from the efficiency gains. The underlying premise of energy saving performance contracts (ESPCs) is that they are paid for from energy and energy-related operations and maintenance savings created by the project. This energy savings usually creates a constant stream of revenue that starts after installation of the equipment. However, it is relatively small and requires several years to repay the large up-front costs of the project as well as the financing and ongoing service-related costs.

The barrier encountered by smaller ESCOs is that they have to use equity in their company as collateral for these large loans. After qualifying for a few projects, which may take months or a year to install, they have little or no uncommitted equity remaining in their company and therefore cannot qualify for further funding. They free equity for use in other projects as their outstanding loans are repaid, but repayment of the loans generally takes years. As a result, small ESCOs may soon find that they cannot pursue new work, because they are unable to qualify for the necessary financing.

Capital constraints are not only a problem for small companies. Large ESCOs pursuing capital-intensive energy efficiency projects also face these limitations. In many areas of the world, even large companies must carry these transactions as liabilities on their balance sheets. For example, ESCOs in Korea have an average debt load of 378%. Manufacturing companies in Korea typically have a debt load of about 160%. The comparative magnitude of the ESCO debt demonstrates the significance of leveraging their assets. This negatively affects the profitability of the company as shown in their periodic earning reports, which may hinder further investment in their company.

3.2 Risks Associated with Energy Saving Performance Contracts

Most commercial financing institutions are not familiar with ESPCs. These institutions tend to view the contracts skeptically. The projects have a number of risk factors that are not common in construction contracting.

- ***Performance Provision.*** One of the key risk factors is the performance provision in the energy services contract. Contracts may depend upon on-going service by the ESCO. In this case, the financial intermediary will be dependent upon ESCO performance beyond the construction period and well into the repayment period under the contract.

Moreover, ESCO contracts depend upon energy efficiency representations made by the equipment manufacturer as well as by actions of the end-user. These representations may be difficult for the investor to evaluate, leading to substantial discounting of projected cash flow and unfavorable financial terms for the ESCO.

- ***Length of Term.*** The length of the term is a risk factor that financiers must take into consideration. In any contract there is a chance that the customer will not be in existence for the length of the contract term. If the customer goes out of business or does not make the payments, financier funding may be lost.

There are similar risks related to the ESCO. If the ESCO goes out of business before the end of the contract term there is a danger again that the financier will not be repaid all of his investment. This risk is higher in countries with small developing ESCO industries, than in countries with ESCOs that have been successfully conducting projects for a number of years.

- ***Guaranteed Savings.*** ESPCs are inherently risky. The payments from the customer are related, in many cases, to guaranteed savings. If a project does not produce the savings guaranteed by the ESCO, the customer's payments to the ESCO are reduced. This can directly affect payments to the financier.
- ***Technology Risks.*** The technology risks related to the equipment installed as part of the project also contribute to the risk associated with ESPCs. While new emerging technologies may have the potential of producing more savings, they do not have a track record of performance over years of operation. ESCOs need equipment that will be reliable for the life of the contract. A faulty batch of equipment that fails prematurely can seriously threaten the profitability of the project.
- ***Unfamiliar Concept.*** In countries with developing ESCO industries, the concept of long-term loans paid back from guaranteed energy savings is foreign to most investment institutions. Educating investors about ESPCs, the benefits, risks, and risk mitigation techniques takes a great deal of time.
- ***Shortage of Investment Capital.*** In some developing countries there is a shortage of investment capital. In those instances, there may not be funding available for ESPC projects. In some cases, the interest rate is so high it prevents ESCOs from handling broadly bundled projects they could otherwise pursue.
- ***Insurance Costs.*** ESCO project insurance is a mechanism that can be used to reduce risk to the lender. This may be required to acquire the loan or may aid in reducing the interest charged the ESCO. This is being used in Korea successfully now. The major problem with it is that cost of insurance drains the fragile savings stream created by the project, which results in a longer term, or less investment available for improvements.

4.0 Barriers to ESCO Work in Korea

CTP and KEMCO have focused a great deal of effort to mitigate various barriers to growth of the ESCO industry. The following barriers have been identified and actions are underway to surmount those barriers.

- ***Artificially Low Energy Prices.*** A major barrier to ESPC work is artificially low energy prices in key market sectors as a result of subsidies. Korea has started to take action to remove the supports, which have held energy prices below their free market value. The government began a program five years ago to raise electric energy prices 20% per year for five years in preparation for privatizing the electricity market. The program was discontinued due to concerns over the impact of privatization on the price of the

commodity. It has since been decided to let market forces determine the cost of electricity that result from privatization. The Korean government has begun privatizing their electricity generation facilities. The effort has met some resistance from unionized labor, but further privatization is planned in the future.

- ***Inconsistent ESCO Quality.*** KEMCO identified the inconsistent quality of Korean ESCOs as another barrier to development of the ESCO market in Korea. Research was conducted in coordination with the Korean Association of ESCOs, to determine the advisability of establishing an ESCO certification program. Based on this assessment, KEMCO has decided not to implement this kind of program. Instead, past performance information is being efficiently shared by past clients with prospective clients about the expertise of the various ESCOs. It is felt that the market will effectively eliminate the weak performers.
- ***Shortage of Skilled Energy Auditors.*** While there are many engineers who currently claim to be “energy auditors” in Korea, most of them, despite being highly qualified engineers, do not have the experience and skills needed for successful energy audits.
- ***Short Paybacks Required in Industrial Sector.*** The short paybacks required of industrial projects complicate pursuing ESCO projects. In general, industry is not favorably disposed to making investments in infrastructure that have payback periods of more than a few years. This significantly limits the scope of projects that can be done in these facilities.
- ***Lack of Equity.*** Perhaps the overarching barrier that remains is the difficulty of obtaining adequate competitive funding for ESPC projects. This problem can be viewed from two perspectives. One is the lack of equity in companies engaged in the process and the other is the inability to interest financial institutions in investing in projects.

The challenge individual Korean ESCOs face is devising the means to improve their balance sheet. Factoring (where the client or a third party directly repays the financier by using the savings stream from improved energy efficiency) of contracted receivables has been applied in Korea with some limited success. Equity capital is nearly nonexistent since there are few “exit” strategies available to the Korean or foreign investor. Most equity investors seek liquidity or must at least see the potential for a “liquidity event” (such as a strategic sale of the business or a public offering of securities) to place its money in a company that may never realize a dividend or capital payout. Increasing the sophistication of Korean ESCOs as financial companies is critical to their building value for non-employee shareholders.

By seeking equity, the Korean ESCO will not only improve its balance sheet, it will also generate cash to support the early development costs for its projects as characterized in Section 3.1. These development costs are then incorporated into the overall project or “capital” costs and any factoring of the contract receivable should recycle the “equity” back into working capital.

Total assets of the company are composed of its liabilities plus retained earnings and “paid-in-capital.” Paid-in-capital will decrease the key leverage ratios that make the ESCO healthier. By increasing its equity, Korean ESCOs can improve their cash flow after debt payments thereby improving the company’s cash position. Eventually the ESCO will be able to take on additional debt based upon its new leverage. This new equilibrium point, if realized by a number of ESCOs, would likely lead to an overall expansion of the ESCO industry in Korea.

5.0 Market Development Measures Tried in Korea

KEMCO is in a unique position to identify and reduce various regulatory barriers to the adoption of new technologies. Its relationship to MOCIE allows it to effectively address barriers to market development since it can affect both legislative and regulatory changes if needed.

Additionally, KEMCO is familiar to prospective users within the target markets. It has a national outreach program that includes all forms of mass media and coordination of various workshops and other forums.

Korea has instituted or is in the process of instituting a number of market development measures aimed at addressing the barriers described in Sections 3 and 4. These measures include:

- ***Building a Corps of Skilled Energy Auditors.*** Energy auditors looking for projects have tended to focus on easy lighting and motor replacement projects. By improving the quality of the energy auditors, the capabilities of the ESCOs, and the reputation of the industry will improve as well. These skilled auditors will be able to identify more complex projects, especially in the industrial sector. To increase the number of skilled auditors, KEMCO has developed a training course and certification program to improve the qualifications of energy auditors.
- ***Providing Auditing Services.*** KEMCO has also promoted the energy management of energy-intensive industries, buildings and transportation companies through energy audits, technical assistance, and post installation management. In 2000, KEMCO provided industry 150 free energy audits and 52 in depth audits identifying \$52.3 million (68 billion won) in annual energy savings potential. It also provided 52 in-depth audits for other buildings with the potential of saving \$761.5 million (990 billion won).
- ***Addressing Uneven ESCO Quality.*** One of the main mechanisms CTP has explored for improving the capabilities of Korean ESCOs is facilitative matchmaking in demonstration projects. That is, finding projects that appear appropriate for an ESCO, and then attempting to introduce U.S. or other international ESCOs experts to the Korean ESCO client team. This process continues to be a major focus of CTP Korea and has had limited success to date. The expenses and risks for U.S. companies to set up operations in Korea are obstacles to this approach, as are building the long distance relationships between the partners.

- ***Readily Accessible Funding Mechanism.*** Work continues to reduce all of the identified barriers to market development, however, CTP is currently focused on further analysis of the major remaining barrier—a readily accessible, sustainable funding mechanism. The Korean government has established a fund for loaning money to contractors pursuing energy efficiency projects. In 2003 the fund had \$234.6 million available for projects. However, to secure loans from this account, an ESCO must have equity available for collateral.

Table 1 shows the amount of money invested from the MOCIE fund in ESCO projects in Korea since 1997. It also shows the funding that MOCIE has set aside in the special account for financing energy efficiency improvements, which includes funding for ESCO projects.

- ***Funds to Address Capital Constraints/Lack of Equity.*** Though the energy fund described above is large, other sources of low cost funding must be developed to reach the funding levels needed for sustained growth of the ESCO industry. As a result, CTP is looking at international funding agencies and international as well as domestic financial institutions that may be interested in investing in the Korean energy efficiency market.

The Korean government has also addressed the constraints on capital by offering tax incentives to both ESCOs and their customers. The government has also established grants and free assistance for regional and municipal governments pursuing energy efficiency projects.

Table 1. MOCIE Special Account for Financing Energy Efficiency

	1997	1998	1999	2000	2001	2002	2003 (as of July)
Amount used for ESCO projects US dollars (millions)	4.39	22.77	49.85	65.85	57.77	107.69	15.62
Special Account US dollars (millions)	78.54	119.77	149.62	193.39	171.54	230.77	234.61

Note: 1 U.S. dollar = 1,300 won

In addition to the preceding list, Korea has taken other actions not specifically related to the barriers listed in Section 4.0, but that should facilitate ESCO market development. These include:

- ***Climate change mitigation projects.*** Projects include the Center for Climate Change Mitigation Projects at KEMCO.
- ***Voluntary agreements to conserve energy.*** These agreements are connected to low interest loans and tax breaks for implementing energy efficiency improvements. Two

hundred and twelve companies have reduced CO2 emissions by 3.4 million tons of carbon and invested \$2 million (2.6 billion won).

- ***Assistance to regions with energy conservation planning.*** Assistance is provided by technical support, information, training, and grants to local governments.
- ***Project Management.*** This includes planning, financing and managing research, development, and diffusion of energy efficiency technologies; new and renewable energy technologies; clean fossil fuel technologies; and resource technologies.
- ***Communications.*** This includes public relations, education, training, publications, and an energy information service.
- ***Demand side management (DSM) support for the major Korean electric, gas, and district heat and cooling utilities.*** The support is in two major areas: encouraging tariff policies that encourage customers to reduce use, and administering “non-price” actions to encourage energy efficiency. These non-price actions include financing energy efficient equipment, incentives for buying energy efficient equipment, audits, information, surveys and analysis.
- ***Support for a growing ESCO industry.*** The government has offered tax incentives and low cost loans for both ESCOs and customers to encourage growth of the industry. The industry has grown from three ESCOs in 1993 to 102 registered ESCOs in 2000. Investment has grown from \$408,000 (\$531 million won) for three projects in 1993 to \$66 million (\$86 billion won) for 519 projects in 2000. The initial projects were for cogeneration in industrial sites and lighting in all sectors of buildings. The breadth of projects is widening to include process control, waste heat utilization and heating, ventilation, and air conditioning (HVAC).
- ***Energy Mart.*** KEMCO holds an annual Energy Mart to encourage dialog between ESCOs and potential customers.
- ***Safety and efficiency management of energy-using equipment.*** This is accomplished through inspection, setting standards, and energy efficiency labeling.

6.0 Evolution of the ESCO Industry in the U.S.

Information regarding the development of the ESCO industry in the U.S. can be of use to developing countries trying to build their own ESCO markets. This section chronicles the U.S. experience and draws lessons for Korea. However, it should be kept in mind that every country situation has unique factors and any lessons must be judiciously applied.

6.1 Origins of the U.S. ESCO Industry

The ESCO industry in the U.S. developed in the 1980s in response to strained electricity generating capacity and a desire by utility companies to defer major investments in new capacity. This led to establishment of DSM programs in a number of utilities in the U.S. Many of these utilities began offering monetary enticements to users who cut their usage and demand. Utilities in many cases offered energy efficiency services through internal entities, and some companies began forming to provide those services separately from the utilities to take advantage of the financial incentives offered.

6.2 Barriers to ESCO Development and Measures to Overcome Them

These small start-up ESCOs faced many of the same barriers that developing country ESCOs face today. They had problems securing reasonably priced financing because this new paradigm (paying for infrastructure upgrades with money saved from utility payments) was unfamiliar to lenders. There were no standards for measuring and verifying performance of the projects, and there was no track record of references on how well the process worked. No labor pool of highly qualified energy engineers existed, and there were no accepted standards or qualifications for ESCO technical personnel.

The Korean ESCO industry has developed in similar ways to the U.S. with some exceptions. The U.S. ESCOs initially did not have the early interest and support of the national government, and as a result, the process was slower than what has been experienced in Korea.

6.2.1 Development of Institutional Clients

The U.S. ESCO industry began to establish itself first in the institutional sector. By 1998 about 60% of ESCO activity had been in the institutional sector. Schools, hospitals, and state and local governmental buildings tend to have many older buildings with heating, cooling, and lighting systems that are near or beyond their expected life. These institutions also tend to have limited funding for making the improvements needed in their infrastructure and are focused on their primary missions (teaching, healing, etc.) By 2000, most state governments had passed legislation that encouraged the use of performance contracting to help meet the needs of state and local institutions. The legislation provided avenues for funding projects and reduced contractual barriers to implementing long-term performance contracts.

Two key factors in making the institutional sector profitable for ESCOs are the quality of the customer and long project durations they are willing to accept. Many states allow the use of public bonds to finance ESPCs in schools for instance. Most of these public institutions know that they will remain in the same location for a long time. They are not concerned with quick payback of the dollars invested. Contract terms in institutional projects in the U.S. can run as long as 25 years, while many industrial customers want to see terms of 5 years or less. The long term projects allow the ESCOs to perform much more comprehensive energy upgrades, while short term projects often result in simple lighting and controls upgrades.

6.2.2 Deregulation of the Power Generation Industry

As performance contracting became more widely accepted in the U.S. a number of controls and other hardware manufacturers started ESCOs of their own, in part to secure a market for their equipment. Most of the largest controls manufacturers and several HVAC equipment manufacturers have or once had ESCOs.

The deregulation of the electricity market in the U.S. has had significant impacts on the ESCO industry. Utilities have been pushed in different directions by the pending deregulation. Many utilities formed or purchased ESCOs in an effort to position themselves to provide more services to their historic customers, when these customers are given the choice of electricity providers in a deregulated environment.

Historically, utility sponsored DSM programs provided ample funding that was used by ESCOs to offset the cost of projects. The impending deregulation made utilities reassess those programs, and many were discontinued in order to increase profitability and cut costs. Other utilities that had been pursuing DSM projects using ESCOs also cut many of their programs. As a result, the volume of ESPC work began to decline during the late 1990s.

6.2.3 The Federal Energy Management Program

The federal government is a major user of energy in the U.S., accounting for about 2% of the national total. The Energy Policy Act of 1992 (EPACT) provided strong direction for the federal government to curtail its energy use. EPACT established the Federal Energy Management Program at DOE to assist federal agencies in decreasing their energy use. The Act also allowed federal facilities to take advantage of utility DSM and rebate programs. It also provided clear guidance on the use of ESPCs by federal agencies.

Initially, the ESPC process was difficult for individual federal facilities to successfully implement projects. In an effort to streamline the process, the U.S. Army Corps of Engineers and DOE both awarded multiple indefinite delivery contracts. These contracts and others have been generating between \$200 million and \$300 million annually in private sector investment to upgrade federal facilities since 1999. Large ESCOs hold the contracts for this program, because small independent ESCOs are too small to successfully pursue or finance the projects. The federal government has also conducted a significant outreach campaign to educate federal facilities about the advantages of using alternative financing projects as a means of curbing energy use and improving infrastructure.

6.2.4 Consolidation of the ESCO Industry

With the growth of the ESCO industry, a large number of energy related industries are now calling themselves ESCOs. Many equipment suppliers and consultants that really do not provide the full range of ESCO services are beginning to call themselves ESCOs. This can give the impression that the ESCO industry is growing, when in fact the opposite is true.

Currently the U.S. ESCO industry is in a consolidation phase. There are few independent small ESCOs still in business. Larger ESCOs, utilities, or equipment manufacturers have bought out most independent ESCOs. The consolidation is being driven by several factors. Looming deregulation caused a great deal of consolidation in the mid to late 1990s. Some ESCOs are finding larger parents in order to obtain more competitive financing rates so that they can in turn offer more competitive prices for their projects.

6.2.5 Seeking Financing for ESCO Projects

Difficulty in securing financing for projects has always been a significant barrier to performing ESCO projects in the U.S. A number of options for financing projects have been tried over the years. Both the Shared Savings model (ESCOs secure financing) and the Guaranteed Savings model (customers secure financing) have been used and are still in existence. The guaranteed savings method of financing allowed many smaller ESCOs to continue to pursue projects that they otherwise would have been unable to do for lack of equity to secure new loans. The catalyst for the acceleration of the guaranteed savings model in the U.S. was the availability of lower cost financing for the customer relative to the financing available directly to the ESCO. For example, public school districts could access tax-free public financing not available to ESCOs. This client financing benefited the ESCOs as well as the school districts since these projects did not count against the ESCO debt burden.

Currently, many state and local government projects are financed through the use of tax-free bonds. Under these scenarios, the client facility takes on the financing responsibility and the ESCO then guarantees performance of the project separately from the financing. A number of states have established system benefit charges as a result of pending deregulation. These states use the budget from these charges to fund energy efficiency and renewable energy projects. Many ESCOs have been able to make use of grants from these budgets to help decrease the costs of new equipment for their customers.

Another practice that helped relieve U.S. ESCOs of the debt burden problem is the assignment of payments or factoring of the financing once the project is in place and operational. Under some accounting rules, performance contracting transactions can be carried “off balance sheet”. In these cases, a company does not have to show the project as a liability on their financial records. The rationale for this practice is that once the project reaches the service phase, the financier is really carrying the debt of the project. The ESCO is simply in the middle passing payments from the client to the financier. In a factoring arrangement, the payments from the customer go straight to the financier, or through an intermediary limited liability corporation (LLC). The LLC distributes the payments to the financier for debt service, and to the ESCO for service period expenses such as annual measurement and verification or operations and maintenance. In the event the ESCO sells the contract revenue stream through factoring to a third party, the liability is still off the balance sheet of the customer and instead is carried by the third party.

In the federal sector, all financing currently must be obtained by the ESCO (the shared savings model). This is one reason that smaller ESCOs were unable to compete successfully for the indefinite delivery contracts being used. Financiers have become comfortable enough with the ESPC process that now they use the financing stream from the project as collateral for the loan.

As soon as the project is awarded, the ESCOs ask the federal contracting officer to assign payments to the financier or in some cases to a third party LLC which then distributes the government's payments between the ESCO and financier. In most cases the financier distributes performance period payments to the ESCO after taking the portion designated for debt service. In some cases, the ESCO receives a check from the financier at the end of construction for the net present value of the performance period payments that would normally go to the ESCO for services performed during the performance period.

6.2.6 Industrial Sector Challenges

U.S. ESCOs are still having problems breaking into the industrial sector, which is the sector of most interest to the Korean national ESCO program. There are a number of reasons why ESCOs have problems doing projects in industrial sites. First, ESCOs attempting to perform projects in a manufacturing facility require specialized knowledge and experience with the particular processes being used. These processes are often proprietary and companies are not willing to share knowledge of the processes with outsiders. There is also tremendous sensitivity to any change in the production line that could in anyway threaten the uninterrupted functioning of that line. Second, many ESCOs that have performed detailed audits at industrial plants and found savings potential have had the results of their free audit then used by the plant to install the energy savings changes without the ESCO receiving any compensation. A third significant barrier to pursuing ESPCs in manufacturing plants is the very short term that many of these plants demand for projects. It is not uncommon for industrial plants to refuse to do projects with total paybacks of over three years. This severely restricts the types of measures ESCOs can pursue.

DOE has had more success with an industrial assessment program to encourage industry to make energy efficiency improvements than it has implementing projects with ESCOs. This program uses a network of universities coordinated by the DOE. The universities use faculty and students to analyze the savings potential at participating industrial sites.

7.0 Identification of International Programs and Procedures for Accessing Funds

7.1 Direct Project Investment by Financiers

In the U.S. and Europe, healthy ESCO industries that are backed by a number of financiers exist. These financiers are familiar with the intricacies of performance contracting, and their risks and benefits. They also have developed working relationships with various ESCOs based on past experience. As a result, the interest rates that are available to ESCOs in the U.S. and Europe have improved significantly over the years as the industries have matured.

If this source of funds through U.S. and European financiers can be made available to ESCOs in Korea or other developing countries it might make a significant contribution in developing these markets. However, the problems with direct investment in ESCOs by international financiers and the added risks of international investment in projects make most financiers unwilling to make funds available to date.

It should be noted that KEMCO and the Korean ESCOs have been working with domestic financiers to develop a similar working relationship domestically. Work in that arena will continue. Investment by international financiers in ESCO projects in Korea is expected to encourage adoption of similar relationships between domestic financiers and ESCOs.

7.2 CTP Partnerships

One of the models being tested by CTP Korea to overcome the reluctance of financiers to invest in Korean ESCOs is the pairing of U.S. and Korean ESCOs in projects. The idea behind this strategy is that the U.S. ESCO takes some of the unknowns out of the equation for the U.S. financier. The U.S. ESCO will also use development techniques for the project that are familiar to the financier. U.S. financiers will, as a result, be more apt to invest in a project in Korea when a U.S. ESCO that they have done business with before is involved.

While the U.S. ESCO plays an important role in the development and financing of these projects, the Korean ESCO plays an equally valuable role. The Korean ESCO has the local engineering expertise, access to, and knowledge of specialty subcontractors, and the relationship with potential customers. These attributes are essential in keeping costs low and ensuring quality installation and service of the efficiency improvements. One of the goals of the program is to increase the local ESCOs' equity over the period of time they are teaming with U.S. ESCOs, since they will not be taking on additional debt or at least less of the debt for these joint projects. A couple of positive outcomes are expected by introducing international investors to the Korean ESCO market. International investors who specialize in performance contract financing will learn more about the market in Korea. This will allow them to continue to build business in the country. Another likely outcome is that native Korean financing institutions will discover the profitable potential of this market and become more active and offer competitive financing for the ESCOs.

While this model mitigates some of the concerns of international investors, some significant concerns remain. Investor concerns about customer financial viability, currency stability, and convertibility of currency remain significant barriers to investment. A number of U.S. financiers have stated that they would need some type of loan guarantee to actively participate in the Korean market.

7.3 Direct Investment by Financiers with Loan Guarantees

Both the World Bank and the International Finance Corporation (IFC) have provided several international loan guarantee programs.

The World Bank has developed its most advanced program in China supporting the development of three regional ESCOs and expanding that program to other companies through a larger guarantee facility. The IFC has been very engaged in providing guarantees in Eastern Europe.

In most of these projects, the World Bank and the IFC have acted as implementing agents for the Global Environmental Facility (GEF). The GEF has a mandate to provide incremental financing

to support GHG mitigation efforts. Supporting financing to ESCOs has been one of the top priorities of the GEF.

For the GEF to consider a possible grant to Korea, a study needs to be prepared outlining barriers that such a grant would overcome. If the Korean ESCO market is already overburdened with debt, other vehicles may be more appealing to the GEF relative to their interest in providing such a grant to Korea.

The U.S. Export/Import (ExIm) Bank has voiced some interest in the funding of joint projects involving U.S. ESCOs. There are significant limitations on the type of project and amount of the project that they can finance. The ExIm Bank guarantees would be tied to the services provided by the U.S. participant and U.S. manufactured equipment installed. It would not provide a long-term source of funding for Korean ESCOs, but might be important in early growth of the market, while projects are being pursued with U.S. partners.

The ExIm Bank requires a sovereign guarantee from the Korean government or an analysis of the Korean ESCO based on its three most current years of financial records audited in accordance with general accounting principles (GAP). Having qualified for assistance, the ExIm Bank will issue guarantees in case of default, to a commercial bank with U.S. operations. The guarantee is based in the LIBOR and includes an exposure fee as well as the lending bank's spread.

7.4 Funding of “Line of Credit” by a Korean or International Source

A line of credit is a cost saving subset of a revolving fund. Under this kind of scheme, ESCOs would be qualified for pre-approved borrowing limits. The limits would be established based on the credit worthiness of the ESCO. This kind of a measure would probably have a limited value for the obstacle of high debt ratios faced by Korean ESCOs, because the ESCO's ability to borrow is still based on its credit worthiness.

The line of credit does cut down on the transaction costs and time involved in securing approval of a loan for a project. This will help make the transactions smoother and cut some of the costs involved in financing a project. The savings will not be enough to materially help the debt ratio problem of the Korean ESCOs.

In some circumstances, the institution establishing the line of credit and loaning the funds has relaxed some of the debt ratio concerns, allowing the ESCO to borrow more funds than possible from a regular commercial source. This is a very temporary solution that does little to provide a sustainable borrowing mechanism for the ESCO. To be a useful long term tool, such a line of credit would have to be structured to meet the needs of the ESCO. The ESCO typically consumes cash upfront and yet receives its free cash flow after debt repayment. By structuring a hybrid or mezzanine instrument to an ESCO, such an international line of credit may be of significant value to the Korean ESCO industry. It in essence requires a type of loan to the ESCO for installation, with the long term debt and payments being assigned to the financier during the performance period of the contract.

7.5 Revolving Fund by International Source

The concept of a revolving fund may take the form of a more sophisticated equipment financing mechanism. A revolving fund may be able to provide more competitive rates in the discounting of projected cash flow. Moreover, such a fund may be established to better analyze and evaluate the reliability of cash flows and manage the risks inherent in holding the contractual rights and obligations of a portfolio of energy service contracts in Korea.

7.6 Equity Funds

The infusion of equity funds into the Korean ESCO market would be perhaps the most advantageous source of capital to address the industry's overextended balance sheet. An equity fund would allow the ESCO industry to increase its total assets under management while reducing its leverage. In response, Korean lenders would continue to provide credit to the ESCO industry to grow further. Equity would therefore provide the greatest leveraging capacity for the industry.

To access an equity investment, an ESCO would have to issue additional shares in the company's common ownership. The issuance of shares essentially gives the investor a right to any proceeds that may result from a distribution of dividends to the owners or cash proceeds from any sale of the assets of the company after the satisfaction of any outstanding liabilities. Korean ESCOs may consider issuing a form of preferred shares to investors to assure the investor of a dividend stream. Often, equity investors seek terms that will give them assurance that their equity is being treated with preference to the founding shares since the investor is placing cash into an otherwise illiquid investment. ESCOs have the benefit of contracting for fixed payment streams and should be able to accommodate investor demands once they achieve adequate cash flow to cover their annual operating and normal general and administrative costs.

If an equity fund were formed, it could provide a range of services to pool a series of ESCO projects and package these projects for their carbon emission reductions from a portfolio of projects (see discussion below). By so doing, a fund could significantly reduce the transaction costs and share these costs with the normal maintenance cost it would have to incur to serve as an equity fund.

7.7 Use of Carbon Offset Funding

Several Japanese and European financial institutions are in the early stages of developing carbon finance programs to support a range of measurable and verifiable GHG emission reduction projects. These financial institutions are gearing up to provide a range of financial services to so-called GHG projects to provide a form of equity to projects by discounting the future value of the carbon reduction or credits. By providing this type of financing, the total capital requirements for the project are reduced, thus acting as a form of equity that improves leverage of the project enabling the project sponsors to meet key lending ratios.

The challenge of any carbon based financing for the Korean ESCO industry is the size of the transactions. The ESCO projects are comparatively small and the transaction costs of getting a

project approved and certified under the current rules may exceed the benefit of participating in a carbon offset program. The ESCO seeking to use the benefits of GHG mitigation to finance the project would have to pursue larger projects and provide the most comprehensive project that meets the basic financial requirements of its customer. While bundling projects by a developer may help defray some of the costs of qualifying a project, the requirements for approving each sub-portion of the bundle are still extensive and the timing for development of all projects in the bundle would have to be very nearly the same, which adds further complexity to the scheme. Some type of national level bundling of projects might have more potential to lower transaction costs, due to the larger pool of projects involved.

7.8 Applicability to Duplicate these Investment Models in Other Asian Countries

While the above measures were developed to address particular barriers in the Republic of Korea, they can, in general, be applied in most developing countries in Asia. Many can be applied anywhere, though a few funding sources are aimed at Asia. These financing measures are not cure-alls for development of a healthy ESCO industry in any country. They can be an element of a larger strategic national program to develop an ESCO industry.

The attached list of potential funding sources in the Appendix prepared by Econergy may serve as a starting point for ESCOs seeking financing of projects.

8.0 Conclusions and Recommendations

There are a number of barriers to be overcome in growing an ESCO industry. The U.S. and several European countries have developed their ESCO industries over a period of three decades. Lessons learned from these countries' experiences could be leveraged to accelerate the growth of this important GHG mitigation industry in developing countries. The development path of the U.S. ESCO industry may be instructive for Korea and other developing countries.

In the U.S. a combination of factors including government encouragement and support, having institutional clients, a willingness to experiment with alternative financing techniques, and an independent push toward DSM and energy conservation converged to boost the development of the ESCO industry. While some of these factors may not be broadly applicable, the overall experience may provide guidance for other countries seeking to develop an ESCO market.

Like the U.S., Korea has taken a multifaceted approach to nurturing this industry.

- The Korean government has changed regulations and laws to make possible long-term projects financed from utility savings.
- A central agency was made responsible for implementation of the program and given sufficient funding from the government to pursue it.
- A program of training and certification was started for professionals involved in the ESPC process.
- A revolving fund to provide competitive financing for ESCO projects was started.

In addition, Korea is continuing to look for means of reducing the difficulty ESCOs are having in obtaining sufficient financing to continue to pursue projects. This paper is a part of that ongoing effort. There are a number of important options and lessons identified here which deserve more detailed discussion and extension. EPA and KEMCO are interested in comments and suggestions from international industry and government experts as we continue this process. Some of the key ideas, which should be further developed, include the following:

1. How can EPA and KEMCO best encourage partnerships between international and Korean ESCOs? Continuation of the current strategy of forming partnerships between Korean and international ESCOs to take advantage of the respective strengths of both partners seems worthwhile. The ESCO development and financing experience of developed countries can be brought to bear positively on Korean ESCOs. The model of developed country ESCOs bringing backing through their own financiers, in a way that will not add to the Korean ESCOs' current debt load should continue to be pursued.
2. The CTP program will continue to explore ways to build equity in ESCOs through the use of some type of consolidated carbon credit mechanism. The Korean CTP experience suggests that a combination of equity and carbon finance may significantly aid the ESCO industry in Korea. A number of obstacles remain to be overcome, but this combination would lend much needed equity to the Korean ESCOs.
3. Other alternative approaches for domestic finance will continue to be explored. Techniques such as more widespread use of factoring or assignment of payments to financiers, which is commonly used in the U.S., may be able to be more successfully used in the Korean market.
4. In the industrial market, other technical approaches to energy savings will continue to be sought as part of the program. Audits of the technologies and processes in use have promise in saving large amounts of energy in larger industrial plants.
5. Finally, the use of international funding programs that may be available to support ESCO activity should continue to be examined. A detailed list of potential funding sources is provided in the Appendix of this paper to help initiate the process of pursuing alternative international financing for ESCO projects.

These and other ideas for accelerating the transformation of the ESCO market in Korea will be further developed based on review and comments including the side event at COP 9. EPA and KEMCO will continue to update this information and document developments as a potential model for other developing countries.

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Appendix: International Sources of Funding for Korean ESCO Activities

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I. Introduction

This document presents several specialized sources of capital for ESCO and Energy Efficiency projects with a specific emphasis on Mexico and Korea. This document used the work conducted by NREL, “TCAPP Finance Outreach Survey,” September 2001 as a base and expands upon the information provided. The basic information and format of presentation of this previous report is considered a useful beginning to our research. It identified sources of capital for renewable energy and energy efficiency projects under the TCAPP program. Several funding sources were deleted as not relevant or no longer operational, relevant financiers were updated, and several new funding sources were added.

The table in the next section identified those financiers that Econergy considers near or medium term options for funding ESCO projects.

II. Selected ESCO Financers

	Organization	Tpe of organization	Project Types	Financing Types	Volume	Terms	Geographic Focus	Who is eligible	Web site
1	Black Emerald	Private	Renewable energy, energy efficiency and clean power technologies.	Arranges debt and equity	€\$5 million to €\$100 million	5-6% of equity or 1.25-2% of debt	Global	Privately held companies and projects	http://www.blackemerald.com
2	Calvert	Private	Environment and energy	Equity, convertible debt, limited partnership interests	US\$100,000 - US\$750,000 (direct investments), US\$100,000 - US\$1,000,000 (other funds)	Prefer participation with other institutions; generally not a lead investor	Global	Small and medium enterprises	http://www.calvert.com/
3	International Finance Corporation, Environmental Opportunities Facility	Multilateral	Environmental (includes energy efficiency)	Project preparation grants, Low-interest loans, guarantees, forgivable equity, seed capital, etc.	US\$120,000 to US\$600,000	Negotiable	Global	Private Sector project developers	http://www.ifc.org/eof
4	Prototype Carbon Fund (PCF)	Multilateral	Projects that reduce emissions of greenhouse gases (Renewable energy and Energy Efficiency)	Carbon Financing	US\$3.6 to US\$18 million.	purchase certified emission reduction credits (CER) at \$3-4.50 per ton of CO ₂ e.	Global	Private Sector project developers	http://prototypcarbonfund.org
5	Small Enterprise Assistance Funds	Private	Various	minority equity participations, quasi-equity financial instruments and subordinated debt.	Amounts typically range between \$200,000 and \$1,500,000 per business	SEAF will typically make investments which result in SEAF owning between 20% and 49% of the investee.	Emerging free-market economies	Large SMEs	http://www.seafweb.org/
6	Trade and Development Agency (TDA)	Bilateral	Energy and Environment	Grants	Variable	must contribute to U.S. based exports of goods or service	Global	U.S. companies focusing on overseas markets.	http://www.tda.gov/home.shtml
7	UN Foundation	Multilateral, Not-for-profit	Energy Efficiency	Grant for development (not investment) project.	Variable	Grant applicant must have UN partner organization that applies for grant.	Global	Anyone able to access an UN implementing agency	http://www.unfoundation.org/index.asp
8	ISIS Ecotec Fund	Private	clean energy technologies, including energy efficiency	Equity	Variable	Only purchase at exchange listed prices	Global	All publicly listed companies	http://www.isisam.com
9	Private Energy Market Fund LP (PEMF)	Private	Combined Heat and Power, ESCOs, Bioenergy, and energy efficiency	Equity	Variable	Variable	Global	Any privately owned or publicly listed companies	http://www.pemfund.com

III. Complete List of ESCO Financers

Private Financers

- **Black Emerald**
- **Calvert Foundation**
- **CleanTech Fund, LP**
- **E&Co**
- **ISIS Ecotec Fund**
- **Private Energy Market Fund LP (PEMF)**
- **Sustainable Asset Management (SAM) Private Equity Energy Fund LP**
- **Small Enterprise Assistance Funds**

Black Emerald

Web site: <http://www.blackemerald.com>

- **Type of Organization:** Private sector finance facilitation company.
- **Location:** New York, Washington DC, and Geneva.
- **Services Provided:** Arranges debt, equity; structures finance; accesses capital; closes finance; deal advisors.
- **Type of Projects/Technologies:** Renewable energy, energy efficiency, other clean technologies.
- **Type of Financing:** Debt.
- **ESCO Financing:** Available, provided proper guarantees can be presented.
- **Terms & Conditions:** Negotiable. They charge about \$10k/mo retainer fee to developers and a success fee of 5-6% of equity or 1.25-2% of debt.
- **Volume:** €\$5 million to €\$100 million
- **Geographic Focus:** USA, India, Mexico, Eastern Europe and other and developing countries.
- **Who is Eligible:** Privately held companies and projects.
- **Special Features:** Specializes in boutique financing for EE/RE and environmental related technologies. Generally speaking, they specialize in identifying financing for project developers.
- **How to Apply:** Contact Eric Urbani or Michael Ware. They are willing to review.

Contact:

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Tel: +1 212 675.3105,
Fax: +1 212 675.5890
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Calvert Foundation

Web site: <http://www.calvert.com/>

- **Type of Organization:** Private sector investment fund manager with a socially responsible investment focus.
- **Location:** Bethesda, MD
- **Services Provided:** Provides financing for socially responsible companies
- **Type of Projects/Technologies :** Renewable energy, energy efficiency and environment projects.
- **Type of Financing:** Equity, convertible debt, limited partnerships.
- **ESCO Financing:** Available and they have done one deal in Mexico to date.
- **Terms & Conditions:** Calvert Foundation – can fund microenterprise/productive use projects. Will provide debt finance at below market rates, for non-profit. Can only provide up to 10% of total cost. Prefer participation with other institutions; generally not a lead investor. They do offer funding to for-profit enterprises as well.
- **Volume:** US\$100,000 - US\$750,000 (direct investments) and US\$100,000 - US\$1,000,000 (other funds)
- **Geographic Focus:** Global
- **Who is Eligible:** Small and medium enterprises
- **Special Features:** Calvert has investments in several renewable energy companies, including Empresas ESM, Evergreen Solar, Northern Power Systems, Energia Global, Soluz, and Proton Energy Systems.
- **How to Apply:** Contact directly the Bethesda office. Will need audited financial statements of borrower for Calvert Foundation

Contact:

Julie Gorte
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1-800-368-2748
Tel: 301 657 7039
Email: N/A
Calvert Foundation – Shari Brenbach

CleanTech Fund, LP

Web site: <http://www.econergy.net/>

- **Type of Organization:** Private equity fund, initially capitalized by the Inter-American Development Bank's Multilateral Investment Fund.
- **Location:** Latin America.
- **Services Provided:** Provides financing to energy projects. CleanTech fund can directly invest in a project through joint ownership or project finance for special purpose corporation.
- **Type of Projects:** Clean technology, clean energy and energy efficiency.
- **Type of Financing:** Equity investments.
- **ESCO Financing:** Available.
- **Terms & Conditions:**
- **Volume:** Maximum of US\$3,000,000 per project
- **Geographic Focus:** Latin America, especially Mexico, and Brazil.
- **Who is Eligible:** Private mature companies with start-up or expansion projects targeting middle-market, developing and selling clean energy.
- **Special Features:** Range of investments (start-ups, mature companies); seeking long-term capital appreciation and diversification; interest in smaller enterprises and projects.
- **How to Apply:** The manager of the Fund is Econergy International, they are still in the process of closing the fund. Contact Mr. Moscarella for more details.

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FE Clean Energy

Web site: <http://fecleanenergy.com/>

- **Type of Organization:** Investment Fund managers
- **Location:** Darien, Connecticut.
- **Services Provided:** Investment.
- **Type of Projects:** energy efficiency, renewable energy.
- **Type of Financing:** Equity and quasi-equity investing.
- **ESCO Financing:** Available.
- **Terms & Conditions:** Their Latin American Clean Energy Services Fund can invest in Mexican ESCO. Terms will be negotiated based on the specific company.
- **Geographic Focus:** Brazil, Mexico, Chile, and Argentina.
- **Who is Eligible:** Local energy services companies.
- **Special Features:** They are currently working on the development of a third investment fund that will focus on energy efficiency and renewable energy projects in Asia. The Specific focus will be on Thailand, Philippines, Malaysia, and India. This new fund will have the opportunity to invest outside of this set of countries. They will be opening an office in Singapore in November.
- **How to Apply:** Interested parties should contact George Sorenson.

Contact:

FE Clean Energy Group
George Sorenson
Tele: 203-662-9293
Fax: (203) 326-4578
Email: gsorenson@fecleanenergy.com

E&Co

Web site: <http://www.energyhouse.com/>

- **Type of Organization:** E&Co is a non-profit energy investment organization; sister company Energyhouse is a for-profit private sector organization.
- **Location:** New Jersey
- **Services Provided:**
 - Enterprise Development
Assists the entrepreneur to develop or refine the proposed business approaches. Consider the provision of an early stage loan to allow sponsors to engage specific technical, legal or financial advice necessary to move projects forward. Where appropriate, E&Co provides significant assistance in identifying co-financiers and/or later stage finance sources and works with the sponsor in preparing and presenting submissions to these organizations.
 - Direct Investment
E&Co provides early stage investment (\$25,000 - \$250,000) in the form of debt or equity to enable an entrepreneur to further develop its approach or begin implementation or construction of a project.
- **Type of Projects:** Renewable energy and Energy Efficiency
- **Type of Financing:** Debt and Equity; seed capital for enterprises.
- **ESCO Financing:** Available. It has done EE projects in Mexico
- **Terms & Conditions:** Near market terms and conditions, high risks are acceptable.
- **Volume:** US\$25,000 to US\$250,000
- **Geographic Focus:** Has funded projects throughout Asia, Africa and Latin America, with a majority of activities in Brazil and Africa. Korean investments may not be considered due to the countries "developed" status.
- **Who is Eligible:** The project should have a social impact (it has to improve the conditions of the community among other things)
- **Special Features:** Will take bets on projects or companies that are not tested. If projects have social benefits, E&Co is willing to risk capital on projects with little track records of success.
- **How to Apply:** The project proposal should contain General Information, Technical Information, Financial/Economic Information, Local Market Conditions, and Risk Assessment. Guidelines for proposals and evaluation criteria can be found at website. The project proposal should be written in English and sent to E&Co.

Contact:

**Latin America
and Caribbean**

E+Co LAC

P.O. Box 13443-1000

San José, Costa Rica

Tel: 506 296 3532

Fax: 506 296 4810

Office email: eycolac@amnet.co.cr

Asia

P.O. Box 11454 - Tungal

Kathmandu, Nepal

Costa Rica

Tel: 977 1 410 146

Fax: 977 1 438 442

Email: jeffd@mos.com.np

Christine Eibs-Singer

383 Franklin Street

Bloomfield, NJ 07003

Tel: +1 973 680 9100

Fax: +1 973 680 8066

Email: chris@energyhouse.com

ISIS Ecotec Fund

Web site: <http://www.isisam.com>

- **Type of Organization:** Private equity fund run by Friends, Ivory, & Sime
- **Location:** London
- **Services Provided:** Equity investing.
- **Type of Projects:** Various, clean energy technologies, including energy efficiency.
- **Type of Financing:** Equity, specifically listed companies.
- **ESCO Financing:** Willing to consider projects if the company is listed on a local or international exchange.
- **Terms & Conditions:** Purchase at exchange listed prices.
- **Volume:** Variable.
- **Geographic Focus:** While mainly investing in Europe and North America they can invest in other regions including Asia.
- **Who is Eligible:** All publicly listed companies.
- **Special Features:** The fund aims to take advantage of new markets and investment opportunities created by deregulation, technological advances and growing environmental concerns. Investments will be made in companies at all stages of their growth.
- **How to Apply:** Contact the individual below.

Contact:

Mark Thompson

Tele: +044 84 5799 2299

Email: adviser.enquiries@isisam.com

Private Energy Market Fund LP (PEMF)

Web site: <http://www.pemfund.com>

- **Type of Organization:** A privately owned equity fund capitalized with \$50 million and is managed by Emerging Power Partners Ltd.
- **Location:** Finland.
- **Services Provided:** Equity Investing
- **Type of Projects:** Combined Heat and Power, ESCOs, Bioenergy, and energy efficiency.
- **Type of Financing:** Equity.
- **ESCO Financing:** One of three core investing areas.
- **Terms & Conditions:** Looking to be a minority to participate as a developer or long-term owner. Aims to exit after reasonable holding period (4-8 years). Pre-negotiated exit strategy with the other shareholders is preferred.
- **Volume:** Average investment is €3-5 million.
- **Geographic Focus:** Latin America, Eastern Europe, & Asia.
- **Who is Eligible:** Mainly looking for privately owned companies.
- **Special Features:** Public listing or trade sale routing is also possible.
- **How to Apply:** See <http://www.pemfund.com/appl.htm> for more details.

Contact:

Juhani Iloven
Telekante 40
PO Box 92
02151 Espoo
Finland
Tele: +358 94691209
Fax: +358 9469 1207
Email: Juhani.ilvonon@pemfund.com

Sustainable Asset Management (SAM) Private Equity Energy Fund LP

Web site: <http://www.sam-group.com>

- **Type of Organization:** A privately owned equity fund capitalized with €48.6 million and is managed by SAM Equity Partners Ltd. The fund is capitalized by several North American and European private firms.
- **Location:** London, U.K.
- **Services Provided:** Equity Investing
- **Type of Projects:** Renewable energy, Clean Technologies, and energy efficiency.
- **Type of Financing:** Equity.
- **ESCO Financing:** Willing to consider projects.
- **Terms & Conditions:** The market exists or will exist within a three-year time frame and market growth is projected at a minimum of 15-20% per annum. There must be potential for three to ten times the return on capital invested within a three-to five-year time frame. Do not seek voting control or a majority equity position, they do seek an active role in our portfolio companies, typically as a board director of the company.
- **Volume:** Variable.
- **Geographic Focus:** Global. Prefer more 'developed' markets.
- **Who is Eligible:** Any privately owned or publicly listed companies.
- **Special Features:** N/A
- **How to Apply:** Contact individuals listed below.

Contact:

Alois Flatz
Zollikerstr. 60, 8702 Zollikon
Zurich, Switzerland
Tele: +41 (0) 1 395 28 00
Fax: +41 (0) 1 395 28 10

Email: Alois@sam-group.com

Small Enterprise Assistance Funds

Web site: <http://www.seafweb.org/>

- **Type of Organization:** Investment Fund.
- **Location:** Washington, DC.
- **Services Provided:** Provides equity capital and technical assistance to small and medium-size private enterprises (SMEs).
- **Type of Projects:** Various.
- **Type of Financing:** Equity and Quasi-equity.
- **ESCO Financing:**
- **Terms & Conditions:** Generally looking for high returns ~30%. Amounts typically range between \$200,000 and \$1,500,000 per business. SEAF will typically make investments which result in SEAF owning between 20% and 49% of the investee. They prefer to be a minority active partner.
- **Geographic Focus:** Emerging free-market economies.
- **Who is Eligible:** Larger SMEs with EE/RE businesses. They are very interested in co-finance with E&Co or big players such as AES, Enron, who can later buy SEAF out. Typical investments are \$300-400k. Investments are made primarily through minority equity participations, often combined with quasi-equity financial instruments and subordinated debt.
- **Special Features:** Small Enterprise Assistance Fund (SEAF) has several funds which focus on small and medium enterprise development. The Sichuan SME Investment Fund has just begun and will operate for 4 years. In the fifth year, they may be continuing or looking to exit their investments.
- **How to Apply:** Contact the names below.

Contact:

Bill Carr, energy/environment

Bert van der Vaart, director

Tel: 202 737 8463

Fax:

Email:

Public Financers

- **Development Credit Authority – USAID**
- **Global Environmental Facility (GEF)**
- **Inter-American Development Bank (IDB)**
- **International Finance Corporation (IFC)**
- **Netherlands Development Finance Company (FMO)**
- **GEF/International Finance Corporation, Small and Medium Enterprise Fund (SME)**
- **International Finance Corporation, Environmental Opportunities Facility (EOF)**
- **Multilateral Investment Guarantee Agency (MIGA)**
- **Overseas Private Investment Corp. (OPIC)**
- **Prototype Carbon Fund (PCF)**
- **U.S. Export-Import Bank**
- **U.S. Trade and Development Agency (TDA)**
- **UN Foundation**

USAID's Development Credit Authority (DCA)

Website: www.usaid.gov

- **Type of Organization:** US government.
- **Location:** USA, and USAID country missions.
- **Services Provided:** Provides loan guarantees.
- **Type of Projects:** Multiple sectors including Energy.
- **Type of Financing:** Loan guarantees
- **ESCO Financing:** Have not financed this type of project, but but willing to review project concepts.
- **Terms & Conditions:** Willing to offer a guarantee equivalent to 50% loan value. Project must meet the following criteria:
 - 1) Private sector must share risk (financial partner must have at least 50% of risk).
 - 2) Need must be based on market failure – private sector finance won't provide financing.
 - 3) Must align with strategic objectives of AID Mission.
- **Geographic Focus:** USAID countries.
- **Who is Eligible:** Both sovereign and non-sovereign.
- **Special Features:** N/A
- **How to Apply:** Those interested in DCA financing should contact the USAID Mission (office) in the country or region of the project. The Mission must express an interest in the project, because the guarantee financing will come from Mission budgets. The Washington office acts as a manager of the overall DCA but does not have final decision making authority.

Contact (First talk to in country mission):

Kameron Webber – Washington Representative.
US AID – Washington, DC.
Tel: 202 712 1972

Global Environmental Facility (GEF)

Web site: <http://www.gefweb.org/>

- **Type of Organization:** Multilateral development facility financed by donations from governments. Established to forge international cooperation and finance actions to address four critical threats to the global environment: biodiversity loss, climate change, degradation of international waters, and ozone depletion. From 1991 to 1999, GEF allocated \$884 million to 227 climate change projects and enabling activities, which was matched by more than \$4.7 billion in co-financing. Usually will develop a program that is not targeted to one project but intend towards an entire sector, with specific ability to on-lend or provide grants to specific projects.
- **Location:** Washington, DC, USA.
- **Services Provided:** Grant to cover incremental cost for projects contributing to the improvement in the above mentioned focal areas.
- **Type of Projects:** renewable energy and energy efficiency among others.
- **Type of Financing:** Grants and contingent loans.
- **ESCO Financing:** yes
- **Terms & Conditions:** Generally speaking the terms of the contingent loans are very liberal allowing for the development of projects or sector which currently do not exist in a country. Terms are substantially better than commercial finance, and usually better than most other bilateral or multilateral sources, but are determined on a project/program basis.
- **Geographic Focus:** Global
- **Who is Eligible:** Non-OECD countries. Projects must first be presented to an implementing agency (World Bank or UN) for submission to the GEF. Projects must also have host country approval.
- **Special Features:** The Secretariat reviews each proposal on the basis of project review criteria that include: Country ownership (including eligibility, country-drivenness, and endorsement where relevant); Program and policy conformity (including a conceptual project design, the incremental nature of the activity, and stakeholder identification); Financing plan; and Institutional coordination and support (including Implementing Agency core commitments, linkages, coordination, and collaboration issues).
- **How to Apply:** To apply it is best to talk with a World Bank, UNDP, or UNEP representative who is involved in the country or sector relevant to your project. They will be responsible for presenting a application to the GEF for consideration.

Contact:

http://www.gefweb.org/participants/Implementing_Agencies/Contact_Names/contact_names.html

GEF-UNDP

Dick Hosier

+1 212 906 6591

Richard.hosier@undp.org

Inter-American Development Bank (IDB)

Web site: <http://www.iadb.org>

<http://www.iadb.org/iic>

- **Type of Organization:** Regional Development Bank
- **Location:** Washington DC, with regional offices in multiple Latin American and Caribbean nations.
- **Services Provided:** Private sector and public sector financing.
- **Type of Projects:** Various, including energy efficiency.
- **Type of Financing:** Debt, equity, and technical assistance grants.
- **ESCO Financing:** Willing to consider project.
- **Terms & Conditions:** Variable.
- **Volume:** Variable.
- **Geographic Focus:** All Latin American and Caribbean countries, including Mexico.
- **Who is Eligible:** Regional companies.
- **Special Features:** IDB has several vehicles for financing of private sector energy projects including directly through their Private Sector lending department and the Inter-American Investment Corporation (IIC). IIC finances regionally specific private equity funds to promote the specific goals of the IDB.
- **How to Apply:** Contact the individuals below

Contact:

1300 New York Ave., NW
Washington, DC, 20577, USA

IDB—Dan Shepard
Tele: +1 (202) 623-2708
Email: daniels@iadb.org

IIC-- Steven Reed
Tele: +1 (202) 623 3981
Fax: +1 (202) 623 3802

International Finance Corporation (IFC)

Web site: <http://www.ifc.org/>

- **Type of Organization:** Multilateral development organization, which finances private sector companies. Established in 1956, IFC is the largest multilateral source of loan and equity financing for private sector projects in developing countries. IFC is a member of the World Bank Group. It shares the primary objective of all World Bank Group institutions: to improve the quality of the lives of people in its developing member countries. The IFC has several vehicles for financing of energy related projects, more information is provided about the relevant ones below.
- **Location:** Washington, DC and country offices around the world.
- **Services Provided:** Financing private sector projects located in the developing world; helping private companies mobilize financing in international financial markets; provides advice and technical assistance to businesses and governments.
- **Type of Projects:** Energy Efficiency
- **Type of Financing:** Loan and Equity
- **ESCO Financing:** Available
- **Terms & Conditions:** For new projects the maximum investment is 25 percent of the total estimated project costs, or, on an exceptional basis, up to 35% in small projects. For expansion projects IFC may provide up to 50% of the project cost, provided its investments do not exceed 25% of the total capitalization of the project company. Specific terms depend on the project and the specific funding vehicle used to access IFC financing.
- **Geographic Focus:** Non-OECD countries
- **Who is Eligible:** Private sector companies in Non-OECD countries
- **Special Features:**
- **How to Apply:** There is no standard application form for IFC financing. A company or entrepreneur, foreign or domestic, seeking to establish a new venture or expand an existing enterprise can approach IFC directly. See contact detailed below for the main regional offices:

Contact:

KOREA:

Mr. Javed Hamid, Director
East Asia and Pacific Department
International Finance Corporation
2121 Pennsylvania Avenue, N.W.
Washington, DC 20433, USA

Tele: (202) 473-0400

Fax: (202) 974-4340

MEXICO:

Manuel Nuñez – Resident Representative

Address: Prado Sur 240, Piso 4

Suite 402

Lomas de Chapultepec

Mexico D.F. 11000

Tele: (52-55) 5520-6191

Fax: (52-55) 5520-5659

GENERAL:

Kirstine Damkjaer & Peter Cook, Power Sector Department

Louis Boorstin, Vickram Widge (Carbon Finance) & Russ Sturm, Environmental Finance Group

2121 Pennsylvania Avenue, NW

Washington, DC 20433

Tel: (202) 477 1234

Netherlands Development Finance Company (FMO)

Web site: <http://www.fmo.nl>

- **Type of Organization:** FMO is a bilateral development bank financed by the Netherlands government.
- **Location:** The Netherlands
- **Services Provided:** Financing and Technical Assistance.
- **Type of Projects:** Multiple sectors including Energy.
- **Type of Financing:** Equity, Debt, Guarantees.
- **ESCO Financing:** Willing to consider ESCO projects.
- **Terms & Conditions:** The average commitment for **equity investment** is 5 years. The typical **loan maturity** is 5 to 12 years, with or without a grace period, and 3 years for trade finance facilities.
- **Volume:** FMO normally takes a minority interest and subscribes to between 10% and 35% of a private sector company's **equity**, or an investment of EUR 3 to 5 million. FMO limits its involvement in the case of **loans, guarantees and mezzanine finance** to 25% of a company's balance sheet or total estimated project costs, which generally range from USD 1 million to USD 100 million.
- **Geographic Focus:** Global, including Mexico (Under certain conditions, FMO can make exceptions and provide financing outside of its focus countries. The stipulations are that it concerns an attractive financing opportunity, is executed with partners and fits into our portfolio structure.)
- **Who is Eligible:** Private sector companies.
- **Special Features:** N/A.
- **How to Apply:** Companies and financial institutions with investment plans in developing countries should contact FMO directly. Upon request, FMO provides individual advice on its financial products or investment promotion programs which may be appropriate.

Contact:

Regional Departments
P.O. Box 93060
2509 AB The Hague
The Netherlands
Telephone: +31 (0)70 314 96 96
Fax: +31 (0)70 324 61 87
E-mail: info@fmo.nl

GEF/International Finance Corporation, Small and Medium Enterprise Fund (SME)

Web site: <http://www.ifc.org/enviro/EPU/SME/sme.htm>

- **Type of Organization:** The GEF/IFC SME Fund operates out of the IFC office in Toronto and is a specialized fund designed to promote the development of projects that promote sound biodiversity management and the reduced impacts of climate change.
- **Location:** Toronto, Ontario.
- **Services Provided:** Provides financing to local or regional financial intermediaries which provide financing, with debt or equity, to SMEs or SME projects which address the biodiversity or climate change objectives of the GEF.
- **Type of Projects:** Biodiversity and Climate change (renewable energy and energy efficiency)
- **Type of Financing:** Long term low interest rate loan and equity
- **Volume:** \$500k-\$1M to financial intermediaries; up to \$750k to a single intermediary.
- **ESCO Financing:**
- **Terms & Conditions:** Provide up to 10 years long-term loan Interest rate (2.5% p.a) to regional financial intermediaries. These intermediaries then add an additional cost onto the lending rate and on-lend to specific projects. Project loans are usually smaller than \$100K.
- **Geographic Focus:** Specific developing countries, currently including Mexico. At present they do not finance projects in Korea.
- **Technology Focus:** Multiple
- **Who is Eligible:** Financial Intermediaries can be from any nation. Specific projects must be from specific developing countries (which they are focusing) and be locally owned.

Requirements to become a financial intermediary include: 1) Pipeline of projects that meet GEF barriers, e.g., financial barriers, technology barriers, distribution risks, 2) Environmental management capabilities– be able to assess kinds of projects in terms of technical design, and 3) Financial management capabilities.
- **Special Features:** N/A
- **How to Apply:** Contact Mr. Biron listed below

Contact:

Maurice Biron
Tele: 416- 690-1250
Fax: 416--690-9757
Email: mbiron@ifc.org

International Finance Corporation, Environmental Opportunities Facility (EOF)

Web site: <http://www.ifc.org/eof>

- **Type of Organization:** Specialized facility operated by the Environmental Finance Group of the IFC.
- **Location:** Washington, DC.
- **Services Provided:** The EOF provides catalytic funding for innovative projects that produce goods and services with environmental benefits, such as clean drinking water. The EOF can also support 'eco-efficiency' improvements that reduce material and energy inputs.
- **Type of Projects:** Environmental (includes energy efficiency)
- **Type of Financing:** Project preparation grants, averaging US\$ 120,000 per project, and flexible investment funding, averaging US\$ 600,000 per project. Low-interest loans, guarantees, forgivable equity, seed capital, etc.
- **ESCO Financing:** Available (for new and existing projects)
- **Terms & Conditions:** Negotiable
- **Geographic Focus:** Global
- **Who is Eligible:** Environmental projects including energy efficiency improvements projects that reduce material and energy inputs through process changes, hence generating savings in production and waste management costs. IFC can look both to new and existing projects for energy efficiency opportunities.
- **Special Features:** Willing to take on more risk than a traditional private sector equity or debt lender.
- **How to Apply:** Contact the names below

Contact:

Alexander Leite or Jeff Liebert

Tel. 1+202-473-2622

Fax 1+202-974-4389

Email: ALeite@ifc.org or JLiebert@ifc.org.

Multilateral Investment Guarantee Agency (MIGA)

Web site: www.miga.org

- **Type of Organization:** MIGA is part of World Bank Group.
- **Location:** Washington, DC.
- **Services Provided:** Investment guarantees. Guarantee against political risk and breach of contract risk.
- **Type of Projects:** Various.
- **Type of Financing:** Political Risk Guarantees
- **ESCO Financing:** Never done an ESCO deal, but they are not excluded.
- **Terms & Conditions:** MIGA will cover (insure) risk of Breach of Contract by a host government for a maximum contract period of 15 years. Equity, shareholder loans, and shareholder loan guaranties, provided the loans have a minimum maturity of three years. Equity investments can be covered up to 90 percent, and debt up to 95 percent, with coverage typically available for up to 15 years.
- **Geographic Focus:** Global
- **Who is Eligible:** World Bank member countries.
- **Special Features:** MIGA's project approval process takes from one to three months depending on the availability of documents and the readiness of the project stakeholders. If the local owner of the project defaults from paying the contractor the amounts stipulated in the contract, then MIGA takes up the issue with the host government. If host government does not cooperate, then MIGA resorts to local and/or international arbitration. If contractor wins the lawsuit, and the project beneficiary still refuses to pay the contractor, (a worst case scenario), then MIGA will pay the contractor the full amount stipulated in the contract.
- **How to Apply:** Contact the appropriate individual listed below.

Contact:

Philippe Valahu
Regional Manager, Asia, Singapore
Tele: 65-6324-4612
Pvalahu@worldbank.org

Khaled Khattaf or Philippe Valahu, Manager, Infrastructure Dept.
Tele: (202) 473-8043
Fax:
Email: kkhattaf@worldbank.org, and Pvalahu@worldbank.org

Overseas Private Investment Corporation (OPIC)

Web site: www.opic.gov

- **Type of Organization:** U.S. government agency specializing in commercial loan political risk guarantees.
- **Location:** Washington, DC.
- **Services Provided:** - Insuring investments overseas against a broad range of political risks; financing of businesses overseas through loans and loan guaranties; (concessional rate debt) financing of private investment funds that provide equity to businesses overseas; and advocating the interests of the American business community overseas.
- **Type of Projects:** Various
- **Type of Financing:** Loans, loan guarantees and quasi-equity
- **ESCO Financing:** Will consider, but have no track record.
- **Terms & Conditions:** Variable depending on project.
- **Geographic Focus:** Emerging market and developing countries.
- **Who is Eligible:**
- **Special Features:** The Overseas Private Investment Corporation's political risk insurance and loans help U.S. businesses of all sizes invest and compete in more than 140 emerging markets and developing nations worldwide. OPIC, a U.S. government agency, assists U.S. private investment overseas because it is in America's economic and strategic interest. By charging user-fees, OPIC operates at no net cost to U.S. taxpayers, and its reserves currently exceed \$4 billion.
- **How to Apply:** Contact the small business group listed below

Contact:

1100 New York Avenue, N.W.
Washington, D.C. 20527
202-336-8400
Tele: (202) 336-8621
Fax: (202) 408-5145
Email: smallbiz@opic.gov

Prototype Carbon Fund (PCF)

Web site: <http://prototypecarbonfund.org>

- **Type of Organization:** Specialized carbon fund managed by the World Bank Group and capitalized by a host of national governments and private sector companies. Total capitalization is \$180 million and the fund will terminate in 2012.
- **Location:** Washington, DC.
- **Services Provided:** Carbon financing for projects that reduces emissions of greenhouse gases
- **Type of Projects:** Renewable energy and energy efficiency.
- **Type of Financing:** Carbon financing
- **ESCO Financing:** Will look at purchasing carbon credits from ESCO project, but have done no deals to date.
- **Terms & Conditions:** Willing to purchase certified emission reduction credits (CER) at \$3-4.50 per ton of CO₂e.
- **Geographic Focus:** Economies-in-Transition and developing countries eligible under the Clean Development Mechanism (CDM).
- **Who is Eligible:** Private Sector project developers. Mexico is eligible under CDM. Korea is not eligible.
- **Special Features:** PCF funds projects that produce high quality greenhouse gas emission reductions which could be registered with the United Nations Framework Convention on Climate Change for the purposes of the Kyoto Protocol.
- **How to Apply:** Interested parties should first consult the World Bank to understand the process by which to apply for PCF funding. It is advisable to speak directly to the PCF to assess where they are currently interested in the specific project type and country of origin. If they indicate an interest, the first step is to write a Project Information Note (PIN), a template of which is available on the PCF webpage.

Contact:

Ms. Odil Tunali Payton
Tele: +1 (202) 473-6774
Fax: +1 (202) 522-4732
Email: Otunalipayton@worldbank.org

U.S. Export-Import Bank

Web site: <http://www.exim.gov/>

- **Type of Organization:** US export credit agency.
- **Location:** Washington, DC.
- **Services Provided:** Loans and export credit guarantees.
- **Type of Projects:** Finances exports, limited recourse project finance.
- **Type of Financing:** Loans, guarantees, credit insurance.
- **ESCO Financing:** Will consider.
- **Terms & Conditions:**
- **Geographic Focus:** Global (with some exceptions).
- **Who is Eligible:** All firms or projects that are planning to purchase U.S. based equipment, goods, or services are eligible.
- **Special Features:** Currently looking to do more renewable energy deals. Also has a special environmental Exports program to increase the volume of use exports in the area of environmentally friendly technologies. This program includes 95% of commercial coverage and 100% of political coverage. This program includes “alternative” energy equipment.
- **How to Apply:** See the following webpage: http://www.exim.gov/tools/how_to_apply.html.

Contact:

Craig O'Connor

Tel: 202-565-3939

Email: craig.oconnor@exim.gov

Cheryl Conlin

Asia Region Business Development Officer

Tel: 202-565-3955

Email: cheryl.conlin@exim.gov

Michael Sams

Email: Michael.Sams@exim.gov

U.S. Trade and Development Agency (TDA)

Web site: www.tda.gov

- **Type of Organization:** The U.S. Trade and Development Agency promotes business development overseas and U.S. based exports.
- **Location:** Washington, USA
- **Services Provided:** Through the funding of feasibility studies, orientation visits, specialized training grants, business workshops, and various forms of technical assistance, we enable American businesses to compete for infrastructure and industrial projects in middle-income and developing countries.
- **Type of Projects:** TDA primarily is involved in these sectors: agriculture; energy; environment; health care; information technology manufacturing; mining and minerals development; telecommunications; transportation; and water resources.
- **Type of Financing:** Grant.
- **ESCO Financing:** Will consider ESCO projects.
- **Terms & Conditions:** Only terms of grant financing are that projects must contribute to U.S. based exports of goods or service.
- **Geographic Focus:** Global
- **Who is Eligible:** U.S. companies focusing on overseas markets.
- **Special Features:**
- **How to Apply:** Contact the names below

Contact:

Albert W. Angulo – Regional Director for Latin America and Caribbean or
Anne McKinney - Manager

Tele: (703) 875-4357

Fax: (703) 875-4009

Geoff Jackson - Regional Director for Asia

Tele: 703 875 4357

fax: 703 875 4009

John Herrman, Deputy Regional Director for Asia,
The U.S. Embassy

Tele: +63 (2) 895-1152

Email: jherrman@doc.gov

E-mail: info@tda.gov

UN Foundation

Web site: <http://www.unfoundation.org/>

- **Type of Organization:** Foundation set up with private donations to finance UN based activities.
- **Location:** New York, USA.
- **Services Provided:** The Foundation is engaged in four primary activities in pursuit of its mission: Grant making. -- Providing additional funding for programs and people served by UN agencies.
 - Strengthening UN Institutions and Encouraging Support for the UN and UN Causes.
 - Helping to forge new partnerships among and between UN agencies, the private sector and NGOs in order to build support for the UN and its efforts while also enhancing the effectiveness of service delivery.
 - In cooperation with the Foundation's sister organization, the Better World Fund, sponsoring or conducting outreach efforts aimed at educating the public about the UN's unique role in addressing global issues and forging international cooperation.
 - New Funds to Support UN Programs and Purposes. -- Encouraging other public and private funds to join and help demonstrate what the UN and the world can do when the public and private sectors cooperate and co-invest.
- **Type of Projects:** Energy Efficiency
- **Type of Financing:** Grant for development (not investment) project.
- **ESCO Financing:** Will consider
- **Terms & Conditions:** Grant applicant must have UN partner organization that applies for grant.
- **Geographic Focus:** Global
- **Who is Eligible:** In order to access UN fund you must go to UN implementing agency.
- **Special Features:** UNF has identified four areas of particular interest: Children's Health; the Environment; Peace, Security and Human Rights; and Women and Population.
- **How to Apply:** Contact the name below to understand how to channel your project activities through the appropriate UN agency.

Contact:

Mr. Wang Xiaodong,
United Nations Foundation
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